

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-243644

(43)Date of publication of application : 29.08.2003

(51)Int.Cl.

H01L 27/148

H04N 1/028

H04N 5/335

(21)Application number : 2002-044149

(71)Applicant : TOSHIBA MICROELECTRONICS  
CORP  
TOSHIBA CORP

(22)Date of filing : 21.02.2002

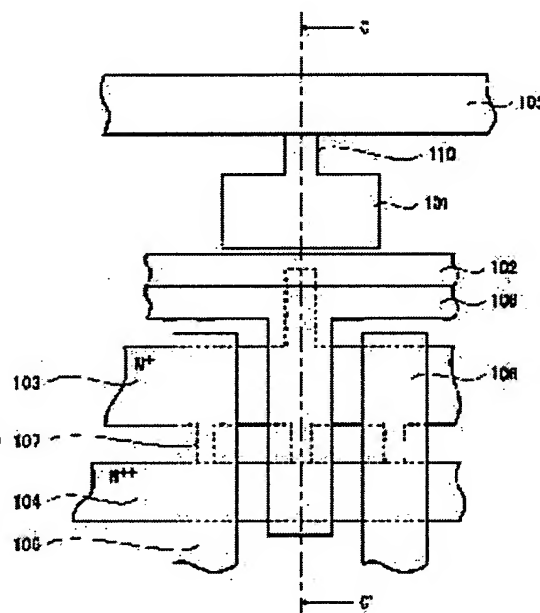
(72)Inventor : KASHIWAGI MINORU

## (54) SOLID-STATE IMAGE PICKUP DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To solve the problem that charges of at least the amount of saturation charge are discharged to a first OFD 104, or in a picture element, charges of at least the amount of saturation charge are discharged to an adjacent second OFD, after charges are transferred to a CCD shift register, in the conventional case, but an OFD barrier part for deciding the amount of saturation is formed by an ion implantation process of impurities, so that a manufacturing process for forming the barrier part is increased.

**SOLUTION:** The potential barrier part is formed in such a manner that a first OFD barrier 107 and a second OFD barrier 110 obtain narrow channel effect, thereby enabling reduction of ion implantation process for forming the potential barrier part and reduction of manufacturing cost.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's

decision of rejection]

[Date of extinction of right]